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The impact of micro financing on poverty levels of rural women farm households in Abia state, Nigeria; implication for policy intervention

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ABSTRACT

This study determined the impact of micro-finance on poverty level of rural women farm households in Abia State, Nigeria: Implication for policy intervention. A multi-stage random sampling technique was used to select the local government areas, communities and respondents in the three (Aba, Ohafia and Umuahia) agricultural zones of the State. The sample size was 240 (120 a piece for rural women farmer borrowers and non borrowers). Instrument of data collection was a set of structured and pre-tested questionnaire administered on both groups of rural women farmers. The result indicated that incidence of poverty or head count ratio was 0.558 for the rural women farmers borrowers and 0.933 for the rural women farmer non borrowers; poverty gap otherwise known as income short fall was 0.4547 for the rural women farmer borrowers and 0.6995 for the rural women farmer non borrowers. The result of the paired t-test showed that micro-finance impacted significantly on annual farm income, farm size and fertilizer use level of rural women farmer borrowers at given levels of significance. It was however, recommended that increased subsidy policy on agro-inputs and increased funding by the micro-finance will significantly aim at reducing the poverty levels of these women.

Keywords: Impact, Micro-financing, Poverty levels, Rural women farm households

INTRODUCTION

Poverty is a phenomenon, as old as the history of the world, but which in recent times has assumed multifarious dimensions. It is a rural dilemma and continues to be a persistent multi dimensional complex. Most of the world's poor are rural-based, suggestive of traditional or primary societies, or people living in the countryside, which may be remote, or isolated by any imaginable geographical description. Rural poverty is common in most of the developing countries. The rural poor make up than 75% of the poor in many sub-Saharan countries (Amalu, 2005).

In fact, in Nigeria, the state of rural poverty is no less alarming with very sharp deterioration in the living standard of the people (Amalu, 1998). He observed that the number of rural people especially women living below the poverty line in Nigeria grew by 42% from 1965 to 1988. According to Oladipo et al (2011), rural population in Nigeria living below poverty line in the rural areas as at 2004 was 54%.

Women constitute a formidable and significant live wire of peasant farming in Nigeria, providing between 70% and 80% of food produced and consumed in Nigeria (Food and Agricultural Organization (FAO) 2004; Nwankwo, 2004; World Bank ,1996). In spite of this, they still face a lot of hardship that have forced them to remain perpetually small-scale producers. Although women farmers contribute significantly to agricultural production in Nigeria, they are least likely to benefit from agricultural extension services, agricultural credit schemes and technologies that would improve their productivity. This has been as a result of barriers exerted by cultural, social, biological and religious factors (Nwaru, 2003; Ijere, 1991). In fact, there is a strong case for arguing that without credit and complementing public infrastructure (roads, bridges, electricity, schools), It is difficult to see how women smallholders could generate incomes that can sustain an adequate livelihood (Durno and Stuart 2005; Hoddinott, 1998; Anyiro and Oriaku, 2011).

In Nigeria, women farmers work 15 to 20 hours a day and ensuring the health, education and overall well-being of the families and communities (Ezeh et al, 2012). Amidst economic crisis, women farmers carry more of the load without crucial support that could raise their agricultural productivity (Karen, 1994; Nwakwo, 2004). Many women fall into the category of the vulnerable landless, unemployed, under employed and suffer most of the consequences of food insecurity. As a result, poverty therefore remains the most critical obstacle inhibiting the political, socio-economic transformation among rural women farmers in Nigeria (Akinyele, 1997).

The poor attention given to women farmers who constitute the majority of farm labour force has led to deterioration in the country's food situation. Not only were there widening food supply-demand gaps, there were also rising import bills (Tanko, 1993; Safilious-Rothschild, 2003).

Despite numerous policies and programmes (Better life for rural women, 1987; Family Support Programme, 1995; Family Support Programme 1997; Ministry of Women Affairs, 2000) geared towards improving the living standard of women in Nigeria, it has been difficult to stem the growth of rural poverty especially among women (Adegeye, 1999; Ezeh, 2007; Nwachukwu and Ezeh, 2007). In the rural areas, the problem is that poverty lingers on as it has defied any precise solution. It

is now strongly believed that a contributing factor to this problem is the inability to properly articulate the depth and severity of rural women poverty.

In order to make the rural women farmers to continue to perform their essential roles, their poverty levels must be determined and reduced. This makes it necessary to know the extent of poverty being experienced by the rural women because the poor are not equally poor and hence, different levels of poverty alleviations measures will be needed to lift them out of poverty (Ayobatele and Amudipe, 1999; Ezeh, 2007).

Micro-finance is the supply of loans, savings and other basic financial services to the poor. These poor smallholder farmers require diverse range of financial instruments to meet working capital requirement, build assets, stabilize consumption and shield themselves against risks. In practice, micro finance is more than disbursement, management and collection of small loans. It is a flexible process by which financial services are delivered to owners of micro-enterprises on sustainable basis. It is therefore, the objectives of this study to specifically

i. Determine the socio-economic characteristics of the rural women farmer borrowers and non borrowers.
ii. Determine the poverty line, poverty incidence and poverty gap between the rural women borrowers and non borrowers in the study area;
iii. Determine the impact of the micro-credits on rural women farmers' income, farm size and fertilizer use level

HYPOTHESIS TESTED

H_1: There is a significant difference in the farm income level, farm size, and fertilizer use level between the rural women farmer loan beneficiaries and non beneficiaries in Abia State, Nigeria.

MATERIAL AND METHODS

The study area is Abia State. The State was purposively chosen because it is one of the major food producing states in the country and majority of its farm labour force are women and live in the rural areas (Abia State, 1992; Nwankwo, 2004). The study covered the three agricultural zones namely Aba, Ohafia and Umuahia. Abia State has a land area of 7627.20 square kilometers with a population of 2,297,978. Of these 1,108,357 (48%) are males while 1,189.621 (52%) are female (NPC, 2006).

Multi stage random sampling technique was used in the selection of local government areas, communities, and respondents. In stage one, two local government areas were randomly selected from each agricultural zone. The local government areas selected were Ikwuano and Umuahia South Local Government Area (Umuahia Agricultural zone); Ohafia and Bende Local Government Areas (Ohafia Agricultural zone); Aba South and Osisioma Local Government Areas (Aba Agricultural zone). This gave a total of 6 local government areas. The second stage involved the random selection of one micro-finance outfit in each local government area, thus bringing the number of micro finance outlets to 6. The sample frame of women farmer borrowers was obtained from micro-finance outfit.

In stage three, 20 women farmers who benefited from the micro finance's agricultural loan facilitates were randomly selected. This gave a total sample size of 120 women farmer borrowers. To provide for the non-borrowers, another set of 120 women farmers were randomly selected bringing the cumulative sample size to 240. The instrument of data collection was via a set of pre-tested and structured questionnaire.

The various analyses carried out include the use of mean, frequency counts, poverty parameters, paired t-test.

In estimating the extent of poverty among the rural women farmers, the following equations were used according to Ayobatele and Amudipe (1999) and Ezeh (2007).

$$H = q/n \quad \text{---------- (I)}$$

Where

H = Head count ratio (Poverty incidence)

Q = number of poor rural women farmers (i.e. those earning below the poverty line).

N = total number of rural women farmers

Poverty depth will be measured with poverty gap index

$$I = [(Z - Y)/Z] \quad \text{---------- (II)}$$

Where

I = Poverty gap

Z = Poverty line estimated using the mean household expenditure

Y = Average income of the poor rural women farmers

Poverty line = mean household expenditure.

Paired treatment test (paired 't' test) was used according to Nwachukwu and Ezeh (2007) as follows;

$$T = \frac{\bar{X}1 - \bar{X}2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}} \quad \text{- - - - - - - - - - (III)}$$

n1 + n2 degrees of freedom

Where

t = paired t statistic

$\bar{X}_1$ = mean parameters of micro finance beneficiaries

$\bar{X}_2$ = mean parameters of non micro finance beneficiaries

S^2_1 = variance of parameters of micro finance beneficiaries

S^2_2 = variance of parameters of non micro finance beneficiaries

n_1 = number of selected rural women farmers micro-finance beneficiaries

n_2 = number of selected rural women farmers micro-finance non beneficiaries

RESULTS AND DISCUSSION

The percentage distribution of some socio-economic variables of the rural women farmer household micro-credit beneficiaries and non beneficiaries is shown in Table I. The result shows that 41.67% of the rural women farmer borrowers were in the age range of between 31 and 40 years while 59.17% of the rural women non micro-credit borrowers were in the age range of between 51 and 60 years. The implication is that there is a deliberate policy in the choice of rural women farm households that are within the active productive workforce. Women farmers in this age group are considered better credit risks in the sense that they are rational decision maker and time is at their disposal to establish reputation within the community (Onyenucheya, 2005).

The result in respect to household size of the respondents is shown in table 1. The result indicated that 43.33% of the rural women farmer borrowers had a household size in the range of 1 and 4 persons while 75.0% of the rural women farmer non-borrowers has a household size in the range of 5 and 8 persons. Formal financial institutions show less preference in financing families of large size. Perhaps, beneficiaries with large household size are likely to spend more of the loans in financing consumption and other basic household requirements than on farm production (Njoku and Odii, 1991).

Various levels of educational attainment of both the rural woman farmer borrowers and non- borrowers are displayed in Table 1.The result revealed that a model rating of 97.5% of the rural woman farmer borrowers and 45.83% of the rural women farmer non-borrowers had one form of formal education or the other. Perhaps possession of formal literacy may be one of the criteria for the procurement of loans from institutional sources (Ahia, 2005). This is because rural women farmers that had formal education have better tendency toward adopting new technology to enhance their productive activities.

The frequency distribution of both groups according to their years of farming experience is shown in table 1. The result revealed that 41.67% of the rural women farmer borrowers and 40% of the rural women farmer non borrowers) of both groups of respondents had farming experience spanning between 11 and 20 years. The economic postulate is that the more experienced a woman farmer is, the better she is to utilize the loans advanced to her judiciously. This is likely to impact positively on the effective management and organization of farms and enhances loan repayment (Nwankwo, 2004).

The distribution of both groups of respondents according to the head of their households is shown in table 1. The result indicates that 59.17% of the rural women farmer borrowers and 54.17% of the rural women farmer non- borrowers assumed the head of their households. Rural women take greater responsibilities for agricultural production and enhanced economic contribution to family needs as their men abandon farming to seek for greener pastures in the cities. The incidence of HIV/AIDS has also rendered many rural women widows and by implication assuming the headship of such households. This is in consonance with the result of Ezeh (2007).

Table 1: Socio economic profile of rural women surveyed

	Rural women farmer borrowers		Rural women farmer non borrowers	
Variables	Frequency	% of all respondents	Frequency	% of all respondents
ages (years)				
21 – 30	23	19.17	19	15.83
31 – 40	50	41.67	20	16.67
41 – 50	41	24.16	10	8.33
51 - 60	6	05.00	71	59.00
Total	120	100.00	120	100.00
Household size				
No. Dependent	16	13.33	18	15.00
1 – 4	52	43.33	4	03.33
5 – 8	51	42.51	90	75.00
9 - 12	1	0.83	8	06.67
Total	120	100.00	120	100.00
Educational level				
No formal education	3	02.5	65	54.17
First school leaving	26	21.67	22	18.33
Secondary School	71	59.16	33	27.50
Certificate Examination				
Tertiary Education	20	16.67	-	-
Total	120	100.00	120	100.00
Farming Experience				
Under 10	9	7.50	28	23.33
11 – 20	50	41.67	48	40.00
21 – 30	46	38.33	40	33.33
> 31	15	12.50	4	03.33
Total	120	100.00	120	100.00
Household head				
Men	49	40.83	55	45.83
Woman	71	59.17	65	54.17
Total	120	100.00	120	100.00

Source: Field survey, 2007

Table 2 shows the farm size distribution of both groups of rural women farmer respondents. The table shows that 65.83% of the rural women farmer borrowers had a land holding of between 1.1 and 3.0 hectares while a greater proportion (52.5%) of

the rural women farmer non-borrowers had a land size holding of below 1 ha. The result further concretizes the fact that customs, traditions and institutional constraints have impeded women's access to land. In most parts of Nigeria, land inheritance system is partrinineal. Women subject their rights to their father, before marriage and to their husbands upon marriage.

Table 2: Farm size distribution of rural women surveyed

	Rural women farmer borrowers		Rural women farmer non borrowers	
Variables	Frequency	% of all respondents	Frequency	% of all respondents
Farm size				
Below 10	41	34.17	63	52.50
1.1 – 3.0	79	65.83	52	43.33
3.1 – 5.0	-	-	5	94.17
Total	120	100.00	120	100.00

Source: Field survey, 2007

Rural women farmer borrowers and non borrowers distribution of agricultural enterprises is shown in Table 3. The dominant (56.67% for rural women farmer borrowers and 64.17% of the rural women farmer non borrowers) agricultural enterprise embarked by both groups of rural women is cassava cultivation. These figures reflect the status of cassava not only as women based crop but the most important food crop in the state.

Table 3: Enterprise dimension of rural women surveyed

	Rural women farmer borrowers		Rural women farmer non borrowers	
Variables	Frequency	% of all respondents	Frequency	% of all respondents
Category of Enterprises				
Cassava	68	56.67	77	64.17
Rice	10	08.33	00	00.00
Cassava/maize/melon	22	18.33	20	16.67
Vegetables	13	10.83	20	16.66
Yam	05	04.17	03	02.50
Livestock	05	04.17	03	02.50
(fishing/poultry)	02	01.67	00	00.00
Total	120	100.00	120	100.00

Source: Field survey, 2007

Table 4 shows the distribution of the respondents according to their annual farm income. The table shows that 30.83% of the rural women farmer borrowers annual farm income spanned between ₦15,000.00 and ₦25,000.00 (100 and166.67 USD) while 41.67% of the annual farm income of rural women farmer non borrowers ranged between ₦15,000 and N20,000.00 (100 and 133 USD). The significantly low proportion of household annual farm incomes suggest the vicious cycle of

poverty often engulfing most rural households. This has insidious implications on household welfare, investment and agricultural productivity (Ezeh, 2007).

Table 4: Annual farm income of rural women surveyed

	Rural women farmer borrowers		Rural women farmer non borrowers	
Variables	Frequency	% of all respondents	Frequency	% of all respondents
Annual Farm income				
15,001 – 20,000.00	37	30.83	50	41.67
20,001 - 25,000.00	37	30.83	43	35.83
25,001 - 30,000.00	20	16.67	19	15.83
30,001 - 35,000.00	16	13.33	5	04.17
35,001 - 40,000.00	6	5.00	3	02.50
40,001 - 45,000.00	1	0.84	-	-
45,001 - 50,000.00	3	2.50	-	-
Total	120	100.00	120	100.00

Source: Field survey, 2007
1 Nigeria Naira (₦) = 150 USD

Table 5 displayed the frequency distribution of both groups of respondents according to value of monthly expenditures. The table shows that 86.67% of the rural women farmer borrowers and 96.6% of the rural women farmer non borrowers) of both groups of respondents spend between ₦1.00 and ₦5, 000.00 (0.006 and 33.33 USD) monthly on both consumption and production windows. The significantly low proportion of household expenditure on consumption and production outlets suggest and underscore the insidious and endemic nature of poverty often engulfing most rural households in Nigeria especially the women folks. Low expenditure and by extension low investment in agriculture results in low output and invariably the food sufficiently gap widens (Ezeh, 2007).

Table 5: Value of monthly expenditure of rural women surveyed

	Rural women farmer borrowers		Rural women farmer non borrowers	
Variables	Frequency	% of all respondents	Frequency	% of all respondents
Expenditure Group				
₦1.00 -5,000.00	104	86.67	116	96.67
5001.00-10,000.00	13	10.83	04	03.33
10,001-15,000.00	03	02.50	00	00.00
15,001-20,000.00	00	00.00	00	00.00
Total	120	100.00	120	100.00

Source: Field survey, 2007
1 Nigeria Naira (₦) = 150 USD

The poverty indicators of rural women farmer borrowers and non borrowers of micro-finance in Abia State, Nigeria are shown in Table 2. The mean household

expenditure is estimated to be ₦3, 292.17 (21.95 USD) per month or ₦39,506.04 (263.37 USD) per annum for rural women farmer borrowers while the mean household expenditure is estimated to be ₦2,667.35 (17.78 USD) per month or ₦32,008.2 (213.39 USD) per annum for rural women farmer non borrowers. Meanwhile, the mean household income is estimated to be ₦2, 057.68 (13.71 USD) per month or ₦24, 692.16 (164.61 USD) per annum for rural women farmer borrowers while the mean house hold income is estimated to be ₦1, 833.38 (12.22 USD) per month or ₦22, 000.56 (146.67USD) per annum for rural women farmer non borrowers. The incidence of poverty otherwise called the head count ratio (Ayobatele and Amudipe, 1999 and Ezeh, 2007) shows that the poverty incidence for rural women farmer borrowers is 0.558 while that of the rural women farmer non borrowers was 0.933. This implies that 55.8% and 93% of the rural women farmer borrowers and non-borrowers in Abia State respectively are poor because their income fell short of the mean household expenditure used as Poverty line.

The poverty gap (poverty depth) also known as the income short fall allows for the assessment of the depth of poverty among the rural women farmer borrowers and non borrowers in Abia State, Nigeria. The poverty gap is 0.4537 for the rural women farmer borrowers while same is 0.6995 for the rural women farmer non - borrowers. This implies that the poor rural women farmer borrowers require 45.37% of the poverty line to get out of poverty while the poor rural women farmer non borrowers require 69.95% of their poverty line to get out of poverty. This amounts to ₦1493.66 (9.96 USD) per rural woman farmer borrower per month or ₦17, 923.92 (119.49 USD) per annum. Also this amounts to ₦1865.81 (12.44 USD) per rural woman farmer non-borrower or ₦22, 389.74 (149.26 USD) per annum for the non borrowers.

Table 2: Poverty indicators of rural women farmers borrowers and non-borrowers of micro-finance in Abia state, Nigeria.

Poverty indicators	Rural women farmer borrowers	Rural women farmer non-borrowers
Mean monthly income (N)	2057.68	1833.38
Mean monthly expenditure (N)	3292.17	2667.35
Poverty line (N)	3292.17	2667.35
Poverty incidence	0.558	0.933
Poverty gap (Poverty Depth)	0.4537	0.6995

Source: Calculated from Field Survey data, 2007

The result of the paired t-test of the rural women famer borrowers and non borrowers in Abia State, Nigeria is show in Table 3. The mean farm income generated from the sale of various produce from both groups of rural women farmers was statistically compared. The mean annual income from the sale of farm produce of rural women farmer borrowers was ₦24, 692.16 (164.61 USD) while that of the rural women farmer non borrowers was ₦ 22, 000.56 (146.67 USD). The difference in annual farm income was ₦ 2, 691.8 (17.95 USD). The result was statistically significant at 1.0% risk level. Therefore, the hypothesis of no significant difference in annual farm

income of the two groups of rural women farmers is rejected. This result is consistent with those obtained by Nwachukwu and Ezeh (2007), Ezeh (2004).

The mean farm size for the rural women farmer borrowers was 1.52 ha while the value for the rural women farmer non borrowers was 1.05 ha. The total farm size includes the total plots of land under the cultivation of the rural women farmers in the study area. The difference in mean farm size between the two groups of rural women farmers was 0.47 hectares. The result was statistically significant at 10.0% level of probability hence the null hypothesis of no difference in farm size of the two groups of rural women farmers is rejected.

The mean quantity or fertilizer used by the rural women farmer borrowers was 402.5 kg while that of the rural women farmer non borrowers was 88.37 kg. The mean difference was 314.17kg and result was statistically significant at 1.0% level of significance. Therefore, the null hypothesis of no significant difference is rejected. This result is consistent with those of Nwachukwu and Ezeh (2007) and Amalu (2005). There is however increased intensity of fertilizer use among the rural women farmer borrowers due to the increased funding from the rural finance institutions.

Table 3: Results of paired t-test for levels of farm income, farm size and fertilizer use between the rural women farmer borrowers and non borrowers in Abia state, Nigeria**.**

		Paired differences		
Paired categories	Mean	Mean difference	Standard deviation	T value
Z_1	24692.16			
Z_2	22000.56			
$Z_1 - Z_2$		2691.8	200.4389	17.170***
Z_3	1.52			
Z_4	1.05			
$Z_3 - Z_4$		0.47	0.0774	1.923*
Z_5	402.5			
Z_6	88.33			
$Z_5 - Z_6$		314.17	1077.4	15.386***

Source: Field survey data, 2007

*** Significant at 1.0 percent level
* Significant at 10.0
Z_1 = Mean annual farm income of rural women farmer beneficiaries.
Z_2 = Mean annual farm income of rural women farmer non- beneficiaries.
Z_3 = Mean farm size (ha) of rural women farmer beneficiaries.
Z_4 = Mean farm size (ha) of rural women farmer non beneficiaries.
Z_5 = Mean fertilizer (kg) use level of rural women farmer beneficiaries.
Z_5 = Mean fertilizer (kg) use level of rural women farmer non beneficiaries.

CONCLUSION AND RECOMMENDATION

The research has shown that the mean household expenditure of the rural women farmer borrowers was ₦ 3,292.17 (21.95 USD) per month while that of the rural women farmer non borrowers was ₦ 2,667.35 (17.78 USD) per month. The study showed that poverty incidence was 0.558 per rural women famer borrowers and 0.933 for rural women farmer non borrowers. The poverty gap also known as income shortfall was 0.4547 for the rural women farmer borrowers and 0.6995 for the rural women non borrowers. The research revealed also that the micro finance institution credits have impacted significantly on the mean annual farm, farm size and fertilizer use level of the rural women farmer borrowers.

Based on the findings of the research, the following recommendation will suffice.

The level of funding by the micro-finance institutions should be increased as evidence has shown that the level of poverty experienced even by their women clientele is high. Increase in the volume of credit disbursed to rural women farmers has the attendant effect to enable them to meet up with their financial needs and help realize the much needed food security objectives.

The various governments (Federal, State, local) should as a matter of deliberate policy impose a greater subsidy on farm inputs especially inorganic fertilizers and other agro chemicals to make not only readily available but affordable, accessible and cost effective to all strata of poor rural women.

The extension agents of the various State ADPs should be encouraged to intensify the aggregation of rural farmers especially the women into cooperatives. This would be the required impetus and new emphasis required by the institutional sources of credit to adopt the policy of group approach to lending as against individual farmer approach.

The governments at all levels should initiate a deliberate policy towards removing the institutional, customary and traditional inhibition to rural women's access to land for agricultural purposes. Increased access to farmland by rural women farmers will boost agricultural output and reduce endemic poverty among them.

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